IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method to enhance recombinant adeno-associated virus (rAAV) transduction of a mammalian cell, comprising: contacting the mammalian cell with at least one rAAV and at least two different agents that each enhance intracellular rAAV transduction of a mammalian cell in an amount effective to more than additively ~~or synergistically~~ enhance rAAV transduction, wherein at least a first agent ~~one of the agents~~ is an anthracycline ~~a chemotherapeutic, a lipid lowering agent, an antibiotic or a tannic acid,~~ and wherein at least a second agent is a tripeptidyl aldehyde that inhibits proteosome proteolytic activity.

2. (Original) The method of claim 1 wherein the rAAV comprises a marker gene or a selectable gene.

3-4. (Canceled)

5. (Original) The method of claim 1 wherein the agents enhance transduction by at least 2 fold relative to transduction of a corresponding mammalian cell contacted with the rAAV and one of the agents or transduction of a corresponding mammalian cell contacted with the at least one rAAV but not contacted with the agents.

6. (Original) The method of claim 1 wherein the agents enhance transduction by at least 4 fold relative to transduction of a corresponding mammalian cell contacted with the rAAV and one of the agents or transduction of a corresponding mammalian cell contacted with the at least one rAAV but not contacted with the agents.

7. (Original) The method of claim 1 wherein the agents enhance transduction by at least 10 fold relative to transduction of a corresponding mammalian cell contacted with the rAAV and one of the agents or transduction of a corresponding mammalian cell contacted with the at least one rAAV but not contacted with the agents.

8. (Canceled)

9. (Original) The method of claim 1 wherein one rAAV comprises a first recombinant DNA molecule comprising linked:

i) a first DNA segment comprising a 5' inverted terminal repeat (ITR) of AAV;

ii) a second DNA segment comprising a heterologous DNA; and

iii) a third DNA segment comprising a 3' ITR of AAV.

10. (Original) The method of claim 9 further comprising a second rAAV comprising a second recombinant DNA molecule comprising linked:

i) a first DNA segment comprising a 5' ITR of AAV, and

ii) a second DNA segment comprising a heterologous DNA which has sequences that are different than the sequences in the second DNA segment of the first recombinant DNA molecule; and

iii) a third DNA segment comprising a 3' ITR of AAV.

11. (Original) The method of claim 10 wherein the second DNA segment of the first recombinant DNA molecule comprises a portion of an open reading frame for a gene product, optionally operably linked to at least one transcriptional regulatory element, and a splice donor site 3' to the portion of the open reading frame, and wherein the second DNA segment of the second recombinant DNA molecule comprises a splice acceptor site 5' to the remainder of an open reading frame, which together with the second DNA segment of the first recombinant DNA molecule encodes a functional gene product.

12. (Original) The method of claim 11 wherein the transcriptional regulatory element is a promoter.

13. (Original) The method of claim 11 wherein the transcriptional regulatory element is an enhancer.

14. (Original) The method of claim 10 wherein the second DNA segment of the first recombinant DNA molecule comprises an enhancer and the second DNA segment of the second recombinant DNA molecule comprises an open reading frame encoding a functional gene product.

15. (Original) The method of claim 10 wherein the second DNA segment of the first recombinant DNA molecule comprises a promoter and the second DNA segment of the second recombinant DNA molecule comprises an open reading frame encoding a functional gene product.

16. (Original) The method of claim 1 wherein the cell is a lung cell, an epithelial cell, a liver cell, a muscle cell, a hematopoietic cell, a heart cell, or a neuronal cell.

17. (Original) The method of claim 11, 14 or 15 wherein the expression of the functional gene product is enhanced.

18. (Original) The method of claim 9 wherein the second DNA segment encodes a functional gene product.

19. (Original) The method of claim 11, 14, 15 or 18 wherein the functional gene product is a therapeutic peptide or polypeptide or a prophylactic peptide or polypeptide.

20. (Original) The method of claim 19 wherein the functional polypeptide is cystic fibrosis transmembrane conductance regulator, β-globin, γ-globin, tyrosine hydroxylase, glucocerebrosidase, aryl sulfatase A, factor VIII, dystrophin or erythropoietin.

21. (Previously Presented) The method of claim 1 wherein one of the two agents is epoxomicin, doxorubicin, daunorubicin, idarubicin, epirubicin, aclarubicin, camptothecin, simvastatin, cisplatin, LLnL or Z-LLL.

22. (Original) The method of claim 1 wherein the cell is a human cell, canine cell, murine cell, rat cell or rabbit cell.

23. (Original) The method of claim 1 wherein the cell is contacted with at least one agent before the cell is contacted with the virus.

24. (Original) The method of claim 1 wherein the cell is contacted with the virus before the cell is contacted with at least one agent.

25. (Withdrawn) The method of claim 1 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates microfilaments or microtubules.

26. (Canceled)

27. (Withdrawn) The method of claim 1 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates rAAV trafficking in the cell.

28. (Canceled)

29. (Withdrawn) The method of claim 1 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates rAAV nucleic acid degradation in the cell.

30. (Withdrawn) The method of claim 1 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates rAAV protein degradation in the cell.

31. (Withdrawn) The method of claim 1 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates rAAV transport to the nucleus.

32. (Withdrawn) The method of claim 1 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates viral genome transport to the nucleus.

33-42. (Canceled)

43. (Currently Amended) A method to enhance rAAV transduction of a mammalian cell, comprising: contacting the mammalian cell with at least one rAAV and at least two different agents that each enhances intracellular rAAV transduction in an amount that together is effective to at least more than additively ~~are effective to~~ enhance rAAV transduction of a mammalian cell, wherein at least [[one]] a first agent is epoxomicin, doxorubicin, daunorubicin, idarubicin, epirubicin, aclarubicin, simvastatin or tannic acid, and wherein a second agent is a tripeptidyl aldehyde that inhibits proteosome proteolytic activity ~~enhances AAV transduction after viral binding to the cellular membrane and before second strand synthesis which yields an expressible form of the viral genome~~.

44. (Original) The method of claim 43 wherein the rAAV comprises a marker gene or a selectable gene.

45-47. (Canceled)

48. (Original) The method of claim 43 wherein the cell is a lung cell, an epithelial cell, a liver cell, a heart cell, a hematopoietic cell, a muscle cell or a neuronal cell.

49. (Original) The method of claim 43 wherein the rAAV expresses a therapeutic or prophylactic gene product.

50. (Original) The method of claim 43 wherein the cell is a human cell, canine cell, murine cell, rat cell or rabbit cell.

51. (Withdrawn) The method of claim 43 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates microfilaments or microtubules.

52. (Canceled)

53. (Withdrawn) The method of claim 43 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates rAAV trafficking in the cell.

54. (Canceled)

55. (Withdrawn) The method of claim 43 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates rAAV nucleic acid degradation in the cell.

56. (Withdrawn) The method of claim 43 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates rAAV protein degradation in the cell.

57. (Withdrawn) The method of claim 43 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates rAAV transport to the nucleus.

58. (Withdrawn) The method of claim 43 wherein the chemotherapeutic, lipid lowering agent, antibiotic or tannic acid modulates viral genome transport to the nucleus.

59. (Withdrawn) The method of claim 43 wherein the chemotherapeutic, lipid lower agent, antibiotic or tannic acid modulates subcellular localization of proteosomes.

60-61. (Canceled)

62. (Previously Presented) The method of claim 1 or 43 wherein one of the agents is a liposomal formulation of doxorubicin.

63-64. (Canceled)

65. (New) The method of claim 1 or 43 wherein the proteasome inhibitor inhibits calpains, cathepsins, cysteine proteases and chymotrypsin.